(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 September 2003 (04.09.2003)

PCT

(10) International Publication Number
WO 03/073117 A1

(51) International Patent Classification[7]: G01R 33/02, 33/035

(21) International Application Number: PCT/US03/05752

(22) International Filing Date: 26 February 2003 (26.02.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/360,090 26 February 2002 (26.02.2002) US

(71) Applicant *(for all designated States except US)*: **CARDIOMAG IMAGING, INC.** [US/US]; 450 Duane Street, Schenectady, NY 12304 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **TRALSHAWALA, Nilesh** [IN/US]; 28 C Hollandale Lane, Clifton Park, NY 12065 (US). **BAKHAREV, Alexander** [RU/US]; 65 Victoria Court, Niskayuna, NY 12309 (US). **POLYAKOV, Yuri** [RU/US]; 20 Maple Avenue, East Setauket, NY 11733 (US).

(74) Agents: **HELFGOTT, Samson** et al.; Katten, Muchin, Zavis, Rosenman, 575 Madison Avenue, New York, NY 10022-2585 (US).

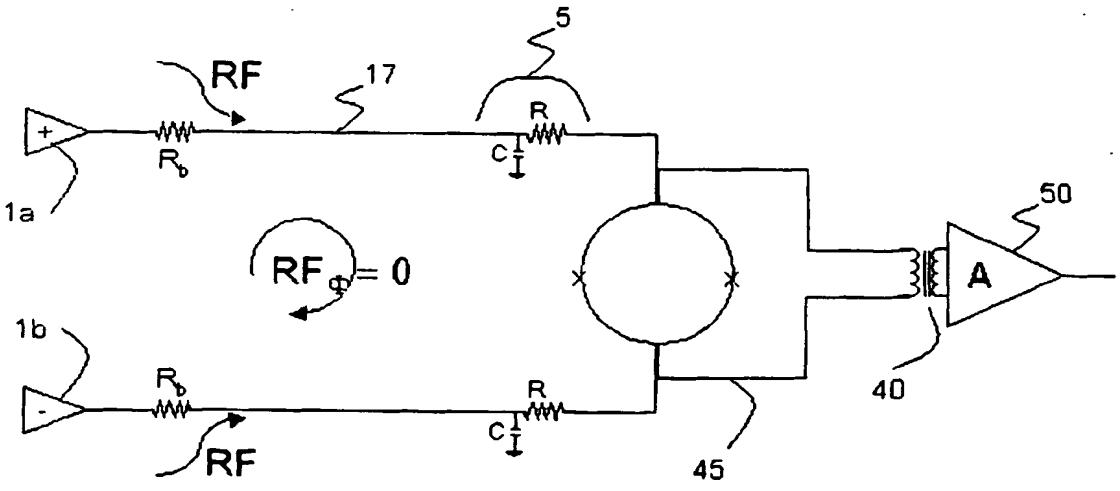
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(regional)*: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

[Continued on next page]

(54) Title: SUB-PICOTESLA MAGNETIC FIELD DETECTOR



(57) Abstract: An instrument for measuring sub-pico Tesla magnetic fields using a superconducting quantum interference device (SQUID) inductively coupled to an unshielded gradiometer includes a filter for filtering magnetically- and electrically coupled radio frequency interference (RFI) away from the SQUID. This RFI is principally coupled to the SQUID via the unshielded gradiometer. In addition, a shielding enclosure is used to electromagnetically shield the filter circuit from the SQUID, and a method is employed to increase the impedance between the input coil and the SQUID without diminishing the overall sensitivity of the instrument.

WO 03/073117 A1